

REPLACED BY  
ART 34 AMST

2004/019016

Rec'd PCT/PTO 11 DEC 2000 CT/EP2002/009021

20

Claims

1. A method of monitoring a bulk property of a product during its production comprising the steps of:
  - 5 c) making repeated on-line measurements of samples of the product to obtain data related to a product property; and
  - d) using this data, determining a bulk property of the product so far produced.
- 10 2. A method as claimed in claim 1 wherein repeated or continuous determination of the bulk property is made throughout the production of the batch.
- 15 3. A method as claimed in claim 2, wherein the bulk property thereby determined is used to assist in controlling the production plant.
- 20 4. A method as claimed in claim 1, 2 or 3, wherein the measurements of step (a) are made sufficiently frequently to follow significant fluctuations in product quality.
- 25 5. A method as claimed in claim 4, wherein the sampling frequency is at least twice the frequency of anticipated significant changes in the product property being tested
- 30 6. A method as claimed in claim 4 or 5, wherein a measurement is taken at least every 10 minutes.
7. A method as claimed in claim 6 wherein a measurement is taken at least every 5 minutes.

8. A method as claimed in any preceding claim,  
wherein the calculation of a batch property takes into  
account the production rate at the times the relevant  
5 measurements occur.

9. A method of controlling a polymer production  
process in which data directly related the aggregate  
properties of the batch of product produced so far are  
10 used to control the process in order to maintain the  
aggregate properties within specification.

10. An apparatus for monitoring a bulk property of a  
product during its production comprising an input for  
15 receiving data corresponding to repeated on-line  
measurements of samples of the product which provide  
data related to a product property, the apparatus being  
arranged to use this data to determine a bulk property  
of the product so far produced.

20 11. Apparatus as claimed in claim 10 arranged  
additionally to receive data indicative of production  
rate and to use such data in determining the bulk  
property.

25 12. Apparatus as claimed in claim 10 or 11, further  
comprising one or more measuring devices arranged to  
supply the input data.

30 13. An apparatus as claimed in claim 12 wherein an NIR  
spectrometer is used to provide input data.

14. An apparatus as claimed in claim 12 or 13, further  
comprising a weight loss feeder arranged to provide  
35 input data indicative of current production rate.

15. An apparatus as claimed in any of claims 10 to 14 wherein determination of the bulk property is carried out by means of a computer under software control.

5

16. A polymer production plant comprising apparatus as claimed in any of claims 10 to 15.